



DEPARTMENT OF FORESTRY AND FIRE PROTECTION

**Office of the State Fire Marshal
Code Development and Analysis**

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**Wildfire Protection Building Construction "CBC 2010 CH7A" Task Force
TASK FORCE NOTICE & MINUTES: CO – CHAIR CONFERENCE CALL
August 13, 2009 2:50 pm – 3:50pm**

An Ad Hoc task force of the OSFM providing recommendations pertaining to exterior wildfire exposure provisions for the 2009 triennial adoption of the California Building Standards Code

(see http://www.bsc.ca.gov/prpsd_chngs/pc_09_annual_cycle.htm) including:

2010 CALIFORNIA BUILDING CODE, CH. 7A (PART 2 "EXPRESS TERMS")

2010 CALIFORNIA BUILDING CODE, SECTION 327 (PART 2.5 "EXPRESS TERMS")

2010 CALIFORNIA FIRE CODE, CH. 49 (PART 9 "EXPRESS TERMS")

2010 CALIFORNIA REFERENCE STANDARDS CODE, CH. 12-7A (PART 12 "EXPRESS TERMS")

Facilitators:

Ethan Foote, Co-Chair
Stuart Tom, Co-Chair

Members Present:

Ben Ho
Cal Lewis
Don Oaks
Francis Mateo
Joseph Mitchell (via e-mail)
Kevin Reinertson
Mike Mentink
Pete Guisasola
Richard Weinert
Sam Manzello
Steve Quarles

Invited Guests:

Jack Cohen, USFS Research Physical Scientist, Missoula Fire Sciences Laboratory.

Staff: None

Documents:

Conference Call invitation with proposed changes (below).
Member comments (below).
California Building Standards Commission, "Building Fire & Other" Code Advisory Committee meeting OSFM document "(CAC) Comments on OSFM Ch7A 10Aug09."

Stakeholders/Interested Parties: None

ACTION ITEMS:

1. The Co-Chairs concluded that, based on conference call comment review and Task Force member participation, the CAC comments did not raise any new issues pertaining to the proposed vent requirements that have not been heard and considered by the Task Force.
2. The Co-Chairs concluded that the Task Force supported the building standards being proposed by the OSFM. No Task Force members raised concerns that the rulemaking package heard by the CAC, and specifically the Section 706A vent provisions, did not represent the Task Force's recommendation.
3. The Task Force concluded that there was no scientific basis or well documented substantiation that ember and wildfire exposure to under eave locations was more severe than other ventilation opening locations such as gable vent.
4. Ethan Foote committed to distribute the draft xxx comparison testing agreement for review

5. The Co-Chairs committed to an additional Task Force meeting or communication with substantial advance notice to address "parking lot" and other Task Force issues, probably late in the upcoming 45-day comment period.

DISCUSSION:

The day after the California Building Standards Commission "Building Fire & Other Code Advisory Committee" meeting Ethan Foote scheduled an informal conference call with the Task Force Co-Chairs and the Vent Working Team Leader (Cal Lewis) to discuss comments and received during the Code Advisory Committee (CAC) meeting. Task Force members were provided with copies of the CAC comments and offered an opportunity to dial into the conference call if available.

The after some technical difficulties the conference call began at 2:50pm with Ethan Foote providing a brief overview of the discussions and formal comments received during the August 10th & 11th Building Fire & Other CAC meeting related to Chapter 7A. Ethan indicated that approximately 30% public attendance at the CAC meeting was there to provide comments on the wildfire protection portions of the California Building and Fire Codes, and primarily the vent requirements of CBC Section 706A.

A brief discussion was held regarding timing for any revisions that may result after considering the comments. Kevin Reinertson indicated that the CAC voted to have Section 706A "Held for Further Study" and that OSFM had approximately 10 days in which to consider CAC comments and make revisions to the "Initial Express Terms" (http://www.documents.dgs.ca.gov/bsc/prpsd_chngs/2009/CAC_09/SFM_03-09_ET_P12.pdf) prior to the CBSC sending the entire rule making package back out for a formal "45-day comment period" later this month (http://www.bsc.ca.gov/prpsd_chngs/pc_09_comment.htm).

Ethan Foote initiated a brief discussion on a few of the comments, including one by CAC Member Laura Blaul. Specifically, Laura expressed a concern that Exception #2 of 706A appeared to "loosen existing Chapter 7A regulations" pertaining to under-eave vents. General discussion followed, and the committee repeated discussions from prior months which reinforced the notion that more testing and more science is needed to determine whether under-eave vents are subjected to any increased risk compared to attic vents in other locations.

Discussion was also held regarding a comment received from Rick Thornberry (Task Force Comment # 1A) regarding ceilings located below the tails of roof rafters. The committee declared that this particular ceiling configuration had not been specifically discussed during the course of the Task Force's work. Both Cal Lewis and Ethan Foote raised questions as to how such condition would differ from construction of any soffit located below the roof rafters. The committee concurred that the condition would be similar. Ethan Foote asked the committee if anybody had reason to consider any ceiling located below the roof rafters as requiring special consideration different than for a typical framed soffit. The committee found no difference.

Ethan Foote asked if there were any major issues specifically related to the proposed OSFM building standards on ventilation raised in the CAC comments that had not been previously considered by the Task Force. Cal Lewis stated he found nothing new. There was no dissent to this statement and Stuart Tom stated the OSFM could say the Task Force had heard and evaluated all the vent issues brought up during the CAC meeting.

Sam Manzello discussed plans for the full-scale testing he will be performing in Japan on behalf of NIST. The testing will begin within a few months, and will be based on testing protocols developed by himself and Steve Quarles. The committee confirmed that such testing was important to help understand the effectiveness of screens in preventing substantial ember penetrations. Various committee members stated that the intent of Chapter 7A was not to prevent 100% of all ignitions, but to "reduce" disastrous building losses associated with wildland fires. Sam indicated that the full scale tests would be useful in determining whether the embers that could pass a 1/16-1/8" screen would have sufficient energy to ignite target material.

A lengthy discussion was held regarding gable vents, and whether such location was actually more severe than under-eaves. Various committee members discussed the effects of building orientation and up-sloping terrain on the severity of exposure to under-eave and gable vents. Sam Manzello agreed to consider testing various mesh sizes combined with various target combustion fuels. Rather than restricting target fuel to finely shredded paper litter, 4 types of fuel will be examined. One of the target fuels will be a 2x-OSB combination recommended by Ethan; this combination might be more representative of actual conditions within a framed attic space.

Discussion resumed regarding the relative vulnerability of under-eave vents compared to other locations, including roof-field and gable locations. The Task Force discussed this issue at length and concluded that there was no scientific basis or well documented substantiation for assuming that under-eave exposure was any more severe relative to other locations. It appears that the 2005 Advisory Committee that developed original Chapter 7A had "assumed" that the under eave condition might be more severe due to the eave overhang providing some turbulence. Sam Manzello indicated that the eave might create a "recirculation zone" but the effects of such recirculation would need to be examined more closely. Jack Cohen indicated that such assumption would be true if the exterior wall was engaged in flaming combustion, but at that point "there are other more serious problems to consider". Kevin Reinertson also pointed out that the relative number of vents located under eaves should be compared to the number of vents located in a gable. Jack Cohen stated that the number of vents would be irrelevant, and a comparison should be based on an "area-equivalent" basis only.

Ethan Foote reaffirmed that if under eave vents are expected to be held to a stricter standard, than the basis should be founded on science. Both Jack Cohen and Sam Manzello asserted that at this time there is no science to support the notion that an under-eave vent is more vulnerable than other attic vents.

A brief discussion was held regarding the acceptance of a sprinkler system conforming to 903.3.1.1 in lieu of requiring vent protection. The committee confirmed that 903.3.1.1 refers to a full NFPA-13 system, and that use of a 13-D system would still require protective vents. Stuart Tom confirmed that the use of 903.3.1.1, 903.3.1.2, and 903.3.1.3 to refer to NFPA-13, 13-R and 13-D systems was becoming very familiar as the current IBC-based code has been put into use throughout California.

Pete Guisasola alluded to HCD proposals to allow for "unvented attics," such as high density closed cell spray foam insulation applied directly to the underside of the roof deck, that prevent moisture condensation. Such attics would not require venting and would provide significant wildfire exposure protection.

Ethan closed the discussion by seeking input from the committee as to whether any changes to the recommendations were necessary. He polled the members to confirm that the issues had all been discussed, and that the package that had been submitted was, indeed approved by the committee. All members confirmed that the package was unanimously approved by the task force.

A brief discussion was held regarding the "Parking Lot". Stuart Tom and Ethan Foote indicated that they would determine how to pursue those topics after the current adoption is completed.

Since Don Oaks joined the meeting late, Cal Lewis wanted to make sure he was also confirming the Task Force's disposition regarding the Chapter 7A package. He asked Don if he was in agreement that the package represented the Task Force's recommendation. Don confirmed that he supported the submission, and that the Task Force was unanimous. Don indicated that during the process he had raised issues, but in the end, he supported the package that had been developed.

The conference call was adjourned at 3:50pm.

QUESTIONS: Please contact the task force co-chairs:

Ethan Foote , Assistant Chief CALFIRE Office of the State Fire Marshal 135 Ridgway Ave., Santa Rosa, CA 95401-4318 707-576-2996 707-480-8610 (cell) E-Mail: ethan.foote@fire.ca.gov Fax 707-576-2574	Stuart Tom , P.E., CBO Building Official City of Glendale 633 E. Broadway, Room 101 Glendale, CA 91206 (818) 548-3200 E-Mail: stom@ci.glendale.ca.us FAX: (818) 548-3215
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E-MAIL PARTICIPATION BY JOSEPH MITCHELL

-----Original Message-----

From: Joseph Mitchell [mailto:jw0mitchell@earthlink.net]
Sent: Thursday, August 13, 2009 8:15 AM
To: Foote, Ethan
Cc: stom@ci.glendale.ca.us; clewis1828@hotmail.com
Subject: Comments on vent comments

Ethan, Stuart, & Cal,

I won't be able to attend this afternoon, but I have had a chance to review some of the received comments that Ethan included in his attachment. Here are my general observations:

- How exactly firebrands ignite structures (particularly through vents) and what adequate preventative measures are is certainly research-in-progress, and we cannot be certain that the proposed code changes will fully address all contingencies. While the NIST data does show that you can get brands penetrating through 1/8" that are capable of igniting paper beds, this does not justify the statement made in the slide deck that 1/8" screens "do nothing" to prevent ignition. Smaller brands that burn through 1/8" screen will carry less energy than those burning through 1/4" screen, and so while they certainly can pilot ignition, the range of conditions under which they'll actually do so will be more restricted.

- As for sprinklered attics, the problem with this approach is that there has to be significant involvement of the attic before the sprinkler heads will trigger. Whether these would be effective if the main flaming surface was external also is questionable. As I understand it, the primary function of residential sprinkler systems is to slow fire spread and allow residents time to escape their structure. In the case where the structure is evacuated and under which there is no professional fire support, it is not clear that this strategy would reliably reduce home losses.

- While it may be some time before we have better data on these particulars, I don't think that there is harm in putting through code modifications that we can reasonably expect to lead to some improvement. The main thing is that this needs to be done in a way that makes future adjustments easy as new data and analysis becomes available. To that extent, the work that we did in modularizing and cross-referencing the code language during this cycle will hopefully be a big help to those who participate in the next cycles.

Joe M.

CONFERENCE CALL INVITATION

From: Foote, Ethan [mailto:Ethan.Foote@fire.ca.gov]

Sent: Wednesday, August 12, 2009 2:08 PM

To: rraymer@cbia.org; clewis1828@hotmail.com; hunter@rsf-fire.org; cory.machado@intertek.com; donoaks@verizon.net; Foote, Ethan; Ho, Ben; Hoover, Tonya; Howard.D.Hopper@us.ul.com; howard@westernfire.com; ineke.vanzeeland@intertek.com; jsmalley@NFPA.org; Jim.MacDonald@ventura.org; jwmitchell@mbartek.com; KCimini@hcd.ca.gov; KScott@iccsafe.org; jsharp@swri.org; Mateo, Francis; mmentink@mofd.org; Parsegian, James; Pete.Guisasola@ci.rocklin.ca.us; randall.bradley@acgov.org; Reinertson, Kevin; RWeinert@hcd.ca.gov; Rolland@crawfordspecialtygroup.com; samuel.manzello@nist.gov; Sapsis, Dave; sjensen@cityofnapa.org; steve.quarles@nature.berkeley.edu; Tom, Stuart; Thomas.Fabian@us.ul.com; anthony.sauceda@swri.org

Cc: Luna, Celeste; Tom, Stuart; laurablaul@ocfa.org; ken.kraus@lacity.org

Subject: 13 Aug Conference Call on 2010 CBC Ch7A Vent Comments (877-536-5793 Participant Code is 204 798)

Dear Task Force Members,

On Monday OSFM received the first comments on the wildfire protection code change proposals that you worked on earlier this year. Stuart, Cal Lewis (our Vent Working Team Leader), and I will be having a conference call tomorrow afternoon:

2:30pm-3:30pm

(877) 536-5793

Participant Code is 204 798

to discuss the comments and revisit the Task Force position on our proposed Section 706A Vent requirements (see below). We apologize for the short notice but OSFM has about a week to incorporate what changes we can make quickly before the whole package goes out for a 45-day public comment period. Once that happens we will schedule another conference call or meeting with several weeks notice to discuss progress, challenges, and questions.

If you can join us on such short notice please do so. If you have any concerns about the Section 706A vent provisions the Task Force recommended please contact Stuart or I, even if you cannot call in. Attached are the comments we received.

The California Building Standards Commission (<http://www.bsc.ca.gov/default.htm>) has begun their 2009 Annual Code Adoption Cycle (http://www.bsc.ca.gov/prpsd_chngs/pc_09_annual_cycle.htm) for the 2010 CBC. On Monday the CBSC "Building Fire & Other Code Advisory Committee" (http://www.bsc.ca.gov/abt_bsc/abt_cdadvcomm.htm#building) held a meeting on the over 900 pages of California code change proposals. It was interesting to note that more than 30% of the public participation at

the meeting for all the codes heard was on wildfire protection and most of that was on one issue, vents. The committee allowed more than an hour to hear concerns about Ch 7A and in the end 99% of your work received unanimous approval by the Building Fire & Other Code Advisory Committee.

Your contribution to the work of this Task Force is greatly appreciated.

Sincerely,

OSFM Wildfire Protection Building Construction "2010 CBC Ch7A" Task Force Co-Chairs,

Ethan Foote 707-576-2996 707-480-8610 (cell) E-Mail: ethan.foote@fire.ca.gov	Stuart Tom (818) 548-3200 E-Mail: stom@ci.glendale.ca.us
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**SECTION 706A
VENTS**

706A.1 General. When provided, vents for enclosed attics, enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters, and underfloor ventilation shall be in accordance with section 1203 and this section to resist building ignition from the intrusion of burning embers and flame through the ventilation openings.

706A.2 Requirements. Ventilation openings for enclosed attic spaces, enclosed rafter spaces formed where ceilings are applied directly to the underside of roof rafters, and underfloor ventilation openings shall be fully covered with metal wire mesh, vents, or other materials that meet the following requirements:

1. The size of openings therein shall be a minimum of 1/16th inch (1.6 mm) and shall not exceed 1/8th inch (3.2mm).
2. The material or vent shall be of noncombustible material.

706A.3 Ventilation openings on the Underside of Eaves and Cornices: Vents shall not be installed on the underside of eaves and cornices.

Exceptions:

1. The attic space being ventilated is fully protected by an automatic sprinkler system installed in accordance with section 903.3.1.1.
2. Vents which comply with requirements of this section may be installed on the underside of eaves when the exterior wall covering and exposed underside of the eave are of noncombustible material or Ignition-resistant material in accordance with Section 707A.3 and SFM 12-7A-5 "Ignition-resistant building material."
3. The enforcing agency may accept or approve special eave and cornice vents that resist the intrusion of flame and burning embers.